

File Summary:

File Name	Explanations
rxte_ccdst_data_fmt.txt	This file
rxte_ccdst_data_reduced.txt	The file containing the reduced RXTE CCDST data

The file rxte_ccdst_data_reduced.txt

The reduced format data file contains catalog identifiers, ICRS2000 coordinates, and magnitude information for 15,084 stars identified in the files of Rossi X-ray Timing Explorer charge-coupled device star tracker (RXTE CCDST) data drawn from the RXTE science data archive. The original data were provided by Dr. Craig Markwardt of the RXTE Proportional Counter Array (PCA) Team.

This data file represents the original data reduced to the form of single mean or median magnitudes with uncertainties on the photometric system of RXTE's CCDST 1. The catalog identifiers in the data file are SKYMAP numbers drawn from an augmented version of the SKYMAP SKY2000 Version 4 Master Catalog (1), and the ICRS2000 coordinates are actually the IAU identifiers for the same augmented SKY2000 V4 stars, which are formed from truncated ICRS2000 coordinates.

The data reduction procedure followed included the following steps:

(1) Cross-reference individual star observations with stars included in an augmented form of the SKY2000 Master Catalog (SKY2000 V4 + Tycho-1 [2]), using position as the primary criterion and CCDST magnitude as a secondary criterion.

(2) After segregating cross-referenced observations by tracker identifier, form mean or median magnitudes with uncertainties. (Median magnitudes were

computed for known or suspected variable stars as identified in SKY2000 V4).

(3) Using a selected subgroup of stars, compute conversion coefficients to transform magnitudes on the CCDST 2 photometric system to that of CCDST 1, which uses an A0V standard star and has a sensitivity curve typical of the Ball CT-601 model star tracker.

(4) Compute final mean or median magnitudes with uncertainties for each star.

Checks were performed between each major step, and corrections were performed where appropriate.

Variable stars may be distinguished in the data file by the presence of maximum magnitude and minimum magnitude fields. For these stars, the mean/median magnitude field contains a median value; for all other stars, this field contains a mean value. Known or suspected variable stars were identified in the SKYMAP SKY2000 Version 4 Master Catalog, and further information regarding sources of variability data in that catalog may be found in the documentation accompanying it.

Stars in the data file with SKYMAP numbers of "99999999" indicate observed stars not present in the SKY2000 V4 catalog, but present in the augmented catalog used for cross-reference.

For stars with one or more bright near-neighbors, the catalog star associated with the observation is the brightest component in the CCDST passband.

Byte-by-byte Description of file: rxte_ccdst_data_reduced.txt

Bytes	Format	Units	Label	Explanations	

1-	8	I8	---	SKYMAP ID	[1/23599999] SKYMAP number (RA HHMMNNNN)
9	A1	---	Blank	Field delimiter	
10-	15	I6	---	Num Obs	Number of observation series in mean/median
16	A1	---	Blank	Field delimiter	
17-	24	I8	---	Num Meas	Number of measures in mean/median

25	A1	---	Blank	Field delimiter
26- 32	F7.3	mag	Mag	Mean/median magnitude
33	A1	---	Blank	Field delimiter
34- 40	F7.3	mag	Max Mag	Magnitude at maximum brightness*
41	A1	---	Blank	Field delimiter
42- 48	F7.3	mag	Min Mag	Magnitude at minimum brightness*
49	A1	---	Blank	Field delimiter
50- 56	F7.3	mag	Unc Mag	Uncertainty in mean/median (standard deviation)
57	A1	---	Blank	Field delimiter
58- 84	A27	---	SKY2K ID	SKY2000 Master Catalog IAU identifier

Notes on individual fields -

(*) - The accuracy of the magnitudes at maximum and minimum light are highly dependent on both the number of observations available and sensitivity range of the CCDST's, which is approximately -0.2 to +6.8. The numbers in these two fields will be identical for stars with a single observation series, and in those cases serve only to identify the star as a known or suspected variable.

References:

- (1) - Myers J.R., Sande C.B., Miller A.C., Warren Jr. W.H., Tracewell D.A.;
Goddard Space Flight Center, Flight Dynamics Division (2002). CDS/ADC: V/109
SKY2000 Catalog, Version 4.
- (2) - ESA 1997. CDS/ADC: I/239 The Hipparcos and Tycho Catalogues.